

Video amp. -

This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.

$$R_i = 5000 \text{ ohm}$$

$$V_i = 100 \text{ uV}$$

$$R_o = 100 \text{ } \Omega$$

$$V_o = 200 \text{ uV}$$

$$P_i = \frac{10^{-4}}{5000 \times 10^{-4}} = \frac{1}{5} \times 10^{-8} = 2 \times 10^{-8} \text{ uW}$$

$$P_o = \frac{4 \times 10^{-6}}{100} = 4 \times 10^{-6} \text{ uW}$$

$$\text{Voltage gain} = 6 \text{ db}$$

$$P \text{ gain db} = 10 \log \frac{4 \times 10^{-6}}{2 \times 10^{-8}} = 10 \log 200$$

$$\text{Power gain db} \approx \underline{\underline{23 \text{ db}}}, \quad \underline{\underline{\text{power gain}}}$$

3 SB 100 amplifiers and 1 emitter follower

BW - 1 MC.

Internal Unit

$$R_i = 5000 \text{ ohm}$$

$$V_i = 100 \text{ uV}$$

$$R_o = 10000 \text{ ohm}$$

$$V_o = 1 \text{ V}$$

$$P_i = 2 \times 10^{-8} \text{ uW}$$

$$P_o = \frac{0.01}{10^4} = 10^{-6} \text{ watt}$$

$$P_o = 10^{-6} \text{ uW}$$

$$\text{Power gain} = 10 \log \frac{10^{-6}}{2 \times 10^{-8}} = 50 \times 10^8 = \underline{\underline{77 \text{ db}}}$$

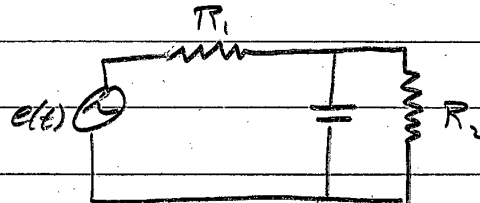
$$\text{Voltage gain} = 20 \log \frac{1}{10^{-4}} = \underline{\underline{80 \text{ db}}}$$

Voltage gain variation from
-6°C to 20°C was 80 db
to 82 db. -20°C to +40°C
was 75 db to 85 db.

BW 200 KC.

60 db
P.G. from
audio amp
requires
for head
operation

- ① Transient response is calculated for circuit:



Bandwidth is taken to the ~~3~~ db point (f₀) where: (acs 8 June 56)

$$2\pi f_0 = \frac{1}{RC}, \quad R = \frac{R_1 R_2}{R_1 + R_2}$$

- ② Points taken from graph of output voltage of 6-stage single tuned, 1 mc IF in MIT Rad Lab Series V. 11, P. 227

- ③ Response of "ideal filter" with cut off at f₀ taken from Brillman, Communications Networks volume II, pp. 485-486

$$\frac{.25}{.15 \times 10^{-3}}$$

1.600

when $t' = 0$

$$\frac{e_2(0)}{EK} = \frac{1}{\pi} \left\{ S_i \frac{n\pi}{2} - S_i \left(\frac{n\pi}{2} \right) \right\}$$

$$= \left[\frac{2}{\pi} S_i \frac{n\pi}{2} \right]$$

$$f\pi = \frac{n}{2}$$

$$\alpha = \frac{2}{\pi} S_i (n\pi)$$

$$\frac{2}{\pi} = .637$$

n	$S_i(n\pi)$	$\frac{2}{\pi} S_i$
.1	.312	.198
.2	.614	.391
.4	1.14	.725
.6	1.56	.995
.8	1.78	1.13
1.0	1.85	1.18
1.2	1.79	1.14
1.4	1.67	1.06
1.6	1.55	.99
1.8	1.46	.95
2.0	1.43	.91